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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/743,994	01/17/2001	Nobuyuki Doguchi	14198	1525

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09/11/2003

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EXAMINER

MULCAHY, JOHN M

ART UNIT

PAPER NUMBER

3739

DATE MAILED: 09/11/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/743,994

Applicant(s)

DOGUCHI ET AL.

Examiner

John M. Mulcahy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 June 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 2,3,5,14-16,18 and 19 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,4,6-13,17,20-22 and 33 is/are allowed.
- 6) ☒ Claim(s) 23-28 is/are rejected.
- 7) ☒ Claim(s) 29-32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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***Election/Restrictions***

1. Applicant's election without traverse of Example 7 in Paper No. 6 is acknowledged. Claims 2, 3, 5, 14-16, 18 and 19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim.

***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seiji (JP 5-253180) in view of Hynecek (5,337,340). \

Seiji shows an endoscope system comprising:

As to claim 23: An endoscope having a solid-state imaging device 20 to which a plurality of pulsating driving signals (OFD pulses) are applied and of which the sensitivity is varied; a signal processing unit 24 for processing an output signal from the solid-state imaging device; a light source unit 10 for irradiating light to an object so that an object image will be projected on the solid-state imaging device; and a sensitivity control device 26 for varying the pulsating signals, applying them to the solid-state imaging device, and thus controlling the sensitivity for the solid-state imaging device.

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Seiji fails to specify control of the electron multiplication rate. However, Hynacek shows an analogous means for varying the sensitivity of a solid state imaging device comprising:

As to claim 23: a solid state imaging device (CCD 122) to which a plurality of pulsating signals are applied (Fig. 4; col. 5, lines 14-17) and of which sensitivity is varied by multiplying electrons produced (col. 10, lines 4-31); a signal processing unit 124 for processing an output signal from the solid-state imaging device; and a sensitivity control device 126, 130 for varying the pulsating signals, applying them to the solid-state imaging device, and thus controlling the sensitivity for the solid-state imaging device (col. 10, lines 4-31).

As to claim 24: when the electrons produced are multiplied, the sensitivity of the solid state imaging device is varied without reducing the effective period during which electrons are accumulated as compared to the case in which sensitivity is not varied. This is inherent to the Hynacek disclosure. Note that the gain is controlled by varying the CMD gate clock amplitude (col. 9, lines 17-19), and not its frequency.

As to claim 25: the solid state imaging device comprises an electron multiplication mechanism in which impact ionization occurs due to the pulsating signals applied (col. 5, lines 14-39), and electrons produced by the control of the amplitudes of the pulsating signals are multiplied to vary the sensitivity thereof (col. 10, lines 14-31). See also col. 2, line 62, through col. 3, line 2; and col. 3, lines 28-50.

As to claim 26: the electron multiplication mechanism is provided at each pixel location or at a preceding stage of a detection amplifier (see Fig. 3 and its description).

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As to claim 27: the electron multiplication mechanism supplies sensitivity control pulses during a reading period of the solid state imaging device (Fig. 4 and col. 10, lines 14-31).

Inasmuch as Hynecek teaches that his device "may be readily incorporated into any CCD design presently known in the art" (col. 9, lines 64-66), it would have been obvious to the artisan to modify Seiji by replacing the disclosed means for varying sensitivity of the solid state imaging device with that disclosed by Hynecek in order to achieve the advantages cited by Hynecek (col. 4, lines 33-60).

***Allowable Subject Matter***

4. Claims 1,4,6-13,17,20-22 and 33 are allowed.

5. Claims 29 and 30-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Claim 1 is generic and allowable. Accordingly, the restriction requirement as to the encompassed species is hereby withdrawn and claim 8 is no longer withdrawn from consideration since it depends from or otherwise include each of the limitations of an allowed generic claim. However, claims 2, 3, 5, 14-16, 18 and 19 remain withdrawn from consideration since they do not depend upon or otherwise include all the limitations of an allowed generic claim as required by 37 CFR 1.141.

In view of the above noted withdrawal of the restriction requirement as to the linked species, applicant(s) are advised that if any claim(s) depending from or including all the limitations of the allowable generic linking claim(s) be presented in a continuation or divisional application, such claims may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application. Once a restriction requirement is withdrawn, the provisions of 35 U.S.C. 121 are no

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longer applicable. See *In re Ziegler*, 44 F.2d 1211, 1215, 170 USPQ 129, 131-32 (CCPA 1971). See also MPEP § 804.01.

### ***Response to Arguments***

7. Applicant argues that Hynecek fails to disclose any control method specialized for the endoscope related to the changing of the sensitivity. However, this is irrelevant. Hynecek teaches that his device is broadly applicable to all known CCD imagers (col. 9, lines 64-66). Inasmuch as Seiji shows the use of a CCD in an endoscope, the artisan would expect the Hynecek device to be applicable to such endoscopes.

8. Applicant's remaining arguments with respect to the new and amended claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Final Rejection***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any


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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Mulcahy whose telephone number is (703) 308-3134. The examiner can normally be reached on M-F, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda C. M. Dvorak can be reached on (703) 308-0994. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0873.



John M. Mulcahy  
Primary Examiner  
Art Unit 3739

John Mulcahy  
August 25, 2003